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Terms: **patno=6021303** ([Edit Search](#))

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*309922 (00) 6021303 February 1, 2000*

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT  
**6021303**

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February 1, 2000

Image heating device and image forming device using the same  
**REISSUE:** February 1, 2002 - Reissue Application filed Ex. Gp.: 2852; Re. S.N. 10/006,035  
(O.G. October 8, 2002)

**INVENTOR:** Terada, Hiroshi, Ikoma, JP; Toyoda, Akinori, Katano, JP; Urata, Yoshihito, Katano, JP; Yamamoto, Hajime, Ikoma, JP; Genji, Nobuo, Osakasayama, JP; Ishimaru, Naoaki, Minoo, JP; Nakatsugawa, Tatsuo, Utsunomiya, JP; Naito, Masakazu, Shioya-gun, JP

**APPL-NO:** 309922 (00)

**FILED-DATE:** May 11, 1999

**GRANTED-DATE:** February 1, 2000

**PRIORITY:** May 15, 1998 - 10-132984, Japan (JP); July 17, 1998 - 10-203005, Japan (JP)

**ASSIGNEE-AT-ISSUE:** Matsushita Electric Industrial Co., Ltd., Osaka, JP

**ASSIGNEE-AFTER-ISSUE:** August 4, 1999 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., MATSUSHITA GRAPHIC COMMUNICATION SYSTEMS, INC. 2-3-8, SHIMOMEGURO, MEGURO-KU TOKYO 153-8687 JAPAN, Reel and Frame Number: 010139/0355

**LEGAL-REP:** Merchant & Gould, P.C.

**PUB-TYPE:** February 1, 2000 - Utility Patent having no previously published pre-grant publication (A)

**PUB-COUNTRY:** United States (US)

**US-MAIN-CL:** 399#328

**US-ADDL-CL:** 399#329, 399#330, 399#335

**CL:** 399

**SEARCH-FLD:** 399#320, 399#328, 399#329, 399#330, 399#333, 399#335, 399#338

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4/17/03

US 6,021,303

10/066035

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?us6021303/pn

\*\* SS 1: Results 1

Search statement 2

?prt fu legalall max

1/1 PLUSPAT - (C) QUESTEL-ORBIT

PN - US6021303 A 20000201 [US6021303]

TI - (A) Image heating device and image forming device using the same

PA - (A) MATSUSHITA ELECTRIC IND CO LTD (JP)

PAO - Matsushita Electric Industrial Company, Ltd., Osaka [JP]

IN - (A) TERADA HIROSHI (JP); TOYODA AKINORI (JP); URATA YOSHIHITO (JP);

YAMAMOTO HAJIME (JP); GENJI NOBUO (JP); ISHIMARU NAOAKI (JP);

NAKATSUGAWA TATSUO (JP); NAITO MASAKAZU (JP)

AP - US30992299 19990511 [1999US-0309922]

PR - JP13298498 19980515 [1998JP-0132984]

- JP20300598 19980717 [1998JP-0203005]

IC - (A) G03G-015/20

EC - G03G-015/20H2D

- G03G-015/20H2P3

ICO - S03G-215/20A3

PCL - ORIGINAL (O) : 399328000; CROSS-REFERENCE (X) : 399329000 399330000  
399335000

DT - Corresponding document

CT - US4256945; US5568240; US5713069; US5752148; US5765086; US5768673;

US5778293; US5822669; US5862445; US5881349; US5939337; US5940655

STG - (A) United States patent

AB - An image heating device comprises a cylindrical heating roller with a Curie temperature of 210 (degree) C., a magnetization coil for magnetizing the heating roller with an alternating magnetic field, which is arranged inside the heating roller, and a nip portion for heating a recording material that carries a toner image with heat from the heating roller, while the recording material is being conveyed along said nip portion. The ratio between the amount of heat generated in said heat-generating member at Curie temperature or higher to the amount of heat generated at room temperature in said heat-generating member is not more than 1/2. With this configuration, the heating roller can regulate its own temperature to stabilize at a temperature that is suitable for fixing, and the problems of partial overheating or underheating, unstable heat generation, or damage of the device can be eliminated.

1/1 LGST - (C) LEGSTAT

PN - US 6021303 [US6021303]

AP - US 309922/99 19990511 [1999US-0309922]

DT - US-P

ACT - 19990511 US/AE-A

4/17/03

US 6,021,303

10/066035

APPLICATION DATA (PATENT)  
{US 309922/99 19990511 [1999US-0309922]}  
- 20000201 US/A  
PATENT  
- 20021008 US/RF  
REISSUE APPLICATION FILED  
20020201  
UP - 2002-42

1/1 CRXX - (C) CLAIMS/RRX  
AN - 3276386  
PN - 6,021,303 A 20000201 [US6021303]  
PA - Matsushita Electric Industrial Co Ltd JP  
PT - E (Electrical)  
ACT - 20020201 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20021008  
REISSUE REQUEST NUMBER: 10/066035  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2852

Reissue Patent Number:

UP - 2002-41  
UACT- 2002-10-08

Search statement 2

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Search statement 1

?fam us6021303/pn

1 Patent Groups  
\*\* SS 1: Results 6

Search statement 2

?famstate nonstop

1/6 INPADOC - (C) INPADOC  
PN - CN 1236121 A 19991124 [CN1236121]  
TI - IMAGE HEATER AND IMAGE FORMING DEVICE USING THE SAME  
IN - TERADA HIROSHI [JP]; YAMAMOTO HAJIME [JP]; TOYODA AKINORI [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]  
AP - CN 99106645/99-A 19990517 [1999CN-0106645]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20; G03G-015/02

2/6 INPADOC - (C) INPADOC

PN - EP 957412 A3 20010627 [EP-957412]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
LA - ENG  
IN - TERADA HIROSHI [JP]; TOYODA AKINORI [JP]; URATA YOSHIHITO [JP];  
YAMAMOTO HAJIME [JP]; GENJI NOBUO [JP]; ISHIMARU NAOAKI [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]; MATSUSHITA GRAPHIC [JP]  
AP - EP 99108631/99-A 19990511 [1999EP-0108631]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20  
DS - AT\* BE\* CH\* CY\* DE\* DK\* ES\* FI\* FR\* GB\* GR\* IE\* IT\* LI\* LU\* MC\* NL\*  
PT\* SE\*

1/1 LEGALI - (C) LEGSTAT

PN - EP 957412 [EP-957412]  
AP - EP 99108631/99 19990511 [1999EP-0108631]  
DT - EP-P  
ACTE- 19990511 EP/AE-A  
EP-APPLICATION  
{EP 99108631/99 19990511 [1999EP-0108631]}  
- 19991117 EP/AK-A2 [+]  
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITHOUT SEARCH REPORT:  
DE GB  
- 19991117 EP/AX [+]  
EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI  
- 19991117 EP/A2 [+]  
PUBLICATION OF APPLICATION WITHOUT SEARCH REPORT  
- 20010627 EP/AK-A3 [+]  
DESIGNATED CONTRACTING STATES IN A SEARCH REPORT:  
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- 20010627 EP/AX [+]  
EXTENSION OF THE EUROPEAN PATENT TO  
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- 20010627 EP/A3 [+]  
SEPARATE PUBLICATION OF THE SEARCH REPORT (ART. 93)  
- 20010905 EP/17P [+]  
REQUEST FOR EXAMINATION FILED  
20010706  
- 20020320 EP/AKX [+]  
PAYMENT OF DESIGNATION FEES  
DE GB  
UP - 2002-12

3/6 INPADOC - (C) INPADOC

PN - EP 957412 A2 19991117 [EP-957412]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
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PA - MATSUSHITA ELECTRIC IND CO LTD [JP]; MATSUSHITA GRAPHIC COMMUNIC [JP]  
AP - EP 99108631/99-A 19990511 [1999EP-0108631]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]

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US 6,021,303

10/066035

IC - G03G-015/20  
DS - DE\* GB\*

1/1 LEGALI - (C) LEGSTAT

PN - EP 957412 [EP-957412]

AP - EP 99108631/99 19990511 [1999EP-0108631]

DT - EP-P

ACTE- 19990511 EP/AE-A

EP-APPLICATION

{EP 99108631/99 19990511 [1999EP-0108631]}

- 19991117 EP/AK-A2 [+]

DESIGNATED CONTRACTING STATES IN AN APPLICATION WITHOUT SEARCH REPORT:  
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EXTENSION OF THE EUROPEAN PATENT TO  
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PUBLICATION OF APPLICATION WITHOUT SEARCH REPORT

- 20010627 EP/AK-A3 [+]

DESIGNATED CONTRACTING STATES IN A SEARCH REPORT:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

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EXTENSION OF THE EUROPEAN PATENT TO  
AL;LT;LV;MK;RO;SI

- 20010627 EP/A3 [+]

SEPARATE PUBLICATION OF THE SEARCH REPORT (ART. 93)

- 20010905 EP/17P [+]

REQUEST FOR EXAMINATION FILED

20010706

- 20020320 EP/AKX [+]

PAYMENT OF DESIGNATION FEES

DE GB

UP - 2002-12

4/6 INPADOC - (C) INPADOC

PN - JP 2000035724 A2 20000202 [JP2000035724]

TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE

IN - TERADA HIROSHI; TOYODA AKINORI; GANJI NOBUO; ISHIMARU NAOAKI;  
NAKATSUGAWA TATSUO; NAITO MASAKAZU

PA - MATSUSHITA ELECTRIC IND CO LTD; MATSUSHITA GRAPHIC COMMUNIC

AP - JP 203005/98-A 19980717 [1998JP-0203005]

PR - JP 203005/98-A 19980717 [1998JP-0203005]

IC - G03G-015/20; G03G-015/20; H05B-006/14

5/6 INPADOC - (C) INPADOC

PN - JP 11327331 A2 19991126 [JP11327331]

TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE

IN - TERADA HIROSHI; YAMAMOTO HAJIME; URATA YOSHITO; GANJI NOBUO; ISHIMARU  
NAOAKI

PA - MATSUSHITA ELECTRIC IND CO LTD

AP - JP 132984/98-A 19980515 [1998JP-0132984]

PR - JP 132984/98-A 19980515 [1998JP-0132984]

IC - G03G-015/20

6/6 INPADOC - (C) INPADOC

4/17/03

US 6,021,303

10/066035

PN - US 6021303 A 20000201 [US6021303]  
TI - IMAGE HEATING DEVICE AND IMAGE FORMING DEVICE USING THE SAME  
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NAKATSUGAWA TATSUO [JP]; NAITO MASAKAZU [JP]  
PA - MATSUSHITA ELECTRIC IND CO LTD [JP]  
AP - US 309922/99-A 19990511 [1999US-0309922]  
PR - JP 132984/98-A 19980515 [1998JP-0132984]  
- JP 203005/98-A 19980717 [1998JP-0203005]  
IC - G03G-015/20

1/1 LEGALI - (C) LEGSTAT

PN - US 6021303 [US6021303]

AP - US 309922/99 19990511 [1999US-0309922]

DT - US-P

ACTE- 19990511 US/AE-A

APPLICATION DATA (PATENT)

{US 309922/99 19990511 [1999US-0309922]}

- 20000201 US/A

PATENT

- 20021008 US/RF

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306-5419  
CP4-9C 18**